



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,098	01/20/2006	Carinne Fleury	263122US0PCT	9512

22850 7590 06/04/2009
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

NELSON, MICHAEL B

ART UNIT	PAPER NUMBER
----------	--------------

1794

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

06/04/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/519,098	Applicant(s) FLEURY ET AL.	
	Examiner MICHAEL B. NELSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,13,15 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9,13,15, 19-21 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/17/09 has been entered. Claims 1, 2, 4-9, 13, 15, 19-21 and 23 are currently under examination on the merits. Claim 22 is withdrawn for being drawn to non-elected subject matter. The previous 112 2nd paragraph issues and double patenting issues have been withdrawn as a result of applicant's amendments.

Claim Objections

2. Claim 1 is objected to because of the following informalities: for the third layer there appears to be a typographical error in that the "doped or not doped" limitation is still present despite the fact that the layer is described as a doped layer. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4-9, 13, 15, 19-21 and 23 rejected under 35 U.S.C. 102(b) as being anticipated by Joret et al. (FR 2,800,998), see English language equivalent U.S. 6,924,037.

Art Unit: 1794

Regarding claim 1, Joret et al. discloses a transparent substrate, comprising on at least one of its faces an antireflection coating, particularly at normal incidence made of a multilayer (A) of thin layers made of dielectrical material with alternatively high and low refractive indexes, characterized in that the multilayer comprises, in succession: a high-index first layer (1), with a refractive index n_1 of between 1.8 and 2.2 and geometrical thickness of between 5 and 50 nm, a low-index second layer (2), with a refractive index n_2 of between 1.35 and 1.65 and a geometrical thickness e_2 of between 5 and 50 nm, a high-index third layer (3) with a refractive index n_3 of between 1.8 and 2.2 and a geometrical thickness e_3 , a low-index depth fourth layer (4) with a refractive index n_4 and a geometrical thickness e_4 ;

(See Abstract and claim 1 of Joret et al. All the limitations are read upon practically verbatim with only the third and fourth layer thickness ranges not exactly matching. The disclosed third layer thickness (70-120 nm) substantially covers the claimed range with both endpoints lying within the claimed range. The disclosed fourth layer thickness (at least 80 nm) substantially covers the claimed range with the lower endpoint (80 nm) lying within the claimed range. Joret et al. discloses that the materials for the first and third layers can be more than one oxide (i.e. a mixed oxide) selected from a group containing ZnO and SnO, (C4, L32-38). Joret et al. also discloses that the layers of the stack can be made to be slightly conductive, for example by doping, in order to impart antistatic functionality. Regarding the reflectance limitation: See Examples 1-13, C13, L5-20, the reflectance of example 4 is 3% less than that of the uncoated substrate, (example 1, C9, L35-45) at normal incidence.)

Art Unit: 1794

Regarding claims 2, 4-7, Joret et al. discloses all of the limitations as set forth above. Additionally the reference discloses a transparent substrate which reads on the limitations of claims 2, 4-7

(See C3, L65-C4, L15, the disclosed ranges exactly match the ranges of instant claims 2, 4 and 5. The lower endpoint of the most preferred disclosed thickness of the third layer (at least 75 nm), lies within the claimed range of instant claim 6. The endpoints of the most preferred thickness of the fourth layer (80-110 nm), lie within the claimed range of instant claim 7. See Abstract, the disclosed range for the second and third layer refractive indexes exactly matches the limitations of instant claims 3.)

Regarding claims 8 and 9, Joret et al. discloses all of the limitations as set forth above. Additionally the reference discloses a transparent substrate wherein

- wherein the high-index first layer (1) and the low-index second layer (2) are replaced by an intermediate-index single layer (5) n_5 of between 1.65 and 1.80 and preferably having an optical thickness $e_{\text{opt}5}$ of between 50 and 140 nm, preferably between 85 and 120 nm.
- wherein the intermediate-index layer (5) is based on a mixture of, on the one hand, silicon oxide and, on the other hand, at least one metal oxide chosen from tin oxide, zinc oxide, titanium oxide or is based on a silicon oxynitride or oxycarbide and/or aluminum oxynitride.

(See C4, L15-35. The first and second layers are disclosed as being combined into an intermediate layer having exactly the same thickness and refractive index as the claimed ranges. The same materials for the intermediate layer are also disclosed.)

Art Unit: 1794

Regarding claim 13, Joret et al. discloses all of the limitations as set forth above.

Additionally the reference discloses a transparent substrate which reads on the limitation of claim 13.

(See C4, L30-40, the materials for the first and third layers are, inter alia, silicon nitrides, as in instant claim 10. See C4, L60-C5, L5, the first or the third layers are disclosed as being made of SnO₂/Si₃N₄ or Si₃Na/SnO₂ bilayers. See C5, L15-30, the second and fourth layers are disclosed as being made of, inter alia, silicon oxide. See C5, L5-15, the substrate is disclosed as being made of, inter alia, clear glass.)

Regarding claim 15 Joret et al. discloses all of the limitations as set forth above.

Additionally the reference discloses a transparent substrate which reads on the limitations of claim 15.

(See Examples 1-13, C13, L5-20, the reflectance of example 4 is 3% less than that of the uncoated substrate, (example 1, C9, L35-45) and the b* value is negative and in claim 15. See C4, L30-40, the materials for the first and third layers are, inter alia, silicon nitrides, which is disclosed as giving the invention heat treatment abilities (C15, L35-40). See C13, L20-30, the disclosed TABER test results of the examples are less than 3%, as in claims 16 and 17.)

Regarding claims 19-21 and 23, Joret et al. discloses all of the limitations as set forth above. Additionally the reference discloses a transparent substrate which reads on claims 19-21 and 23.

Art Unit: 1794

(See C6, L40-55, a multiple glazed unit is disclosed with two glass substrates with a thermoplastic PVB layer in between and with the disclosed four layered antireflective structure (A) on one side and on the other side a different antireflective structure (B), which is disclosed as meeting the limitations of the first embodiment of the second antireflective coating from instant claim 20 (i.e. single low-index layer of silicon oxide with the instant claimed refractive index ranges deposited by CVD, C7, L35-C8, L10). Also see C5, L25-35, a disclosed use of the substrate is for a shop counter.)

Response to Arguments

5. Applicant's arguments filed on 03/19/09 are considered moot in light of the new grounds of rejection. Specifically, Joret et al. discloses that the layers can be doped and the examples are measured for a reflectance at normal incidence light (See Above.).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

/MN/
05/04/09